



Chambers's Journal

SIXTH SERIES.

THE BORDERS OF CIVILISATION.

To what better place, then, can the tired man go? There he will find refreshment and repose. There the wind blows out on him from another century.—ALEXANDER SMITH.



WE arrived in primitive fashion, for it was half-past ten on a cloudy August night when two footsore tramps reached the little clachan—the goal of our hundred-mile walk. Dark as it was, we could not mistake the inn. It was the only two-storied building in the place, except the schoolhouse, and that stood back from the high-road in academic seclusion, while the inn lay full in the way of all passers-by, though these were at most a handful. We had been given up for that night; but still it was not long before we were sitting, each perched on her bed, recklessly drinking strong tea, congratulating ourselves that we had 'done it,' and speculating as to what daylight would reveal. For one of us had never seen the place before (if, indeed, it is not Irish to speak thus of an arrival in pitch-darkness), and the other had had but one hasty glimpse, a year earlier, of the wild scenery surrounding the little cluster of black cabins; but that glimpse had been sufficient to raise the desire to see more of the spot, to inveigle a companion into the adventure, and to bring us, as you shall see, to the very borders of civilisation.

Such was the prelude to an existence which tonight feels like a dream, and which even at the time seemed like an enchantment. Think, if you can, of a place where time is absolutely of no value, and where the rule of life is to rise when you are sufficiently awake, to go out when sunshine and fresh air call you, to return for food when you are hungry, to lie down and to sleep when limbs are weary and eyelids close. We never knew the hour of the clock, and we never needed to. Here were no engagements, no trains, no regular posts; nothing that bound you to punctuality or energy of any kind. We used to get up (or think about it) when we heard the schoolmaster's horn calling in his barelegged troop from over the hills—the horn being simply a large

spiral shell washed on to the shore by some tropical current, and ingeniously turned to use by breaking off its point. We began to make acquaintances as soon as we crossed the threshold that first day, and we soon got to know everybody in the place. Were we not the first strangers who had ever stayed there, and was not our appreciation of it a ready passport to favour?

It was strange how much there was to see, too. From the high-road a passer-by looked over nothing but bleak moorland, culminating on the south in jagged ridges piled one above the other; while to the north lay peat-bog and meadow, and a 'nothingness' beyond which betokened the neighbourhood of the sea. Our first explorations were in this direction. Once safely through the oozy peat, we raced over the short turf which sloped gently down, and suddenly found ourselves looking into space, with a foaming sea breaking into dazzling white surf, full three hundred feet below us. For some miles there was no possible way of descending the cliffs; but later on our good friends the salmon-fishers showed us such wonders of water-worn architecture as made us hold our breath in awe-stricken delight.

Those were delicious hours when we rowed from net to net, watching the men as they hauled in the strong meshes, and the silvery monsters came writhing to the surface. The black cliffs, with their still deeper shadows, barred our vision landward; but elsewhere blue water was round us, and we knew that Greenland would be our first stopping-place could we follow the setting sun. Wonderful caves these men showed us, running far under the land, so that you could hear the muffled roar of the in-coming tide as you lay, out of sight of the water, on the grass above. How delightful, too, were these sturdy fishermen themselves! There was old Macdonald—there is always a Macdonald in the Island of Mist where two or three are gathered together; there was the silent giant who smiled quietly when we spoke, but who would not trust himself in a foreign tongue; there was Aleck the boy, and Rory

M'Fie—Rory the glib of tongue and ever laughing—Rory the black-eyed, the singer, the flatterer—though, indeed, our finest compliment came from old Macdonald. It was a rough day, when the men hesitated about taking us. 'Why not?' quoth he. 'The lassies are just like ourselves,' and that settled it—in we were flung next time the swell brought up the boat within jumping distance of the black basalt. But I must not forget our other friends: the postman, who strolled up some time or other every day with our mails in his coat-pocket. We must have doubled his work, and we frequently exhausted his supply of stamps, for the nearest office was eleven miles off, and he never could remember to bring us money-orders. He took back our written letters, and so saved us a two-mile walk to the barn with a slit in the wall which served as post-office (a word with no equivalent in the native tongue), where the cows showed a feminine curiosity as to your movements which was alarming until you became accustomed to it. Other institutions were on as primitive a scale. There was certainly a school, but we had no telegraph, no doctor, and no church; we were twenty-six miles from a reel of cotton, and more than fifty from a railway. And we did not miss any of them. On fine evenings we would go fishing with the aforesaid postman, or else rambling over the moor and scrambling down cliffs with the schoolmaster, who was our chief companion. He it was who taught us to eat the dulse so cunningly hidden under overhanging seaweed; he, too, who showed us the witch-stone where the milkmaids still pour libations to an otherwise forgotten god; and it was with him that we discovered that clump of white heather which we could just surround with our outstretched arms. I wonder if he has kept the oath we all swore, to conceal its hiding-place. In contrast to this handsome Norseman was Jamie Macdonald, the big navy just home from

digging canals in Mexico. Poor Jamie! I wonder in what country you are toiling to-day, and if you ever think of our climb up steep Quirang, and how you set off, after a look at your compass, in the twilight, making a bee-line for home through the bog. And do you remember the day I just saved myself from slipping over the grassy slope of Duntulm Island on to the rocks below, and clung desperately to a saving stone, and your spring from the gunwale of the boat, and your climb to help me? I remember, too, though you may not, how neatly you footed it at the nightly reel in the kitchen with yellow-haired Annie Nicholson as your partner. She married the quiet MacPherson—did she not?—after breaking your heart among many others. Many little stories such as this we saw begun or ended at our 'social evenings,' when the schoolmaster led the revels, and we would sit round singing each in turn, or else dance reels to the music of Somerled's concertina. Other nights, and on rainy days too, we read much and wrote more, and made wild efforts to pick up the soft, elusive tongue of the country; and I learnt to spin, taught by the sweetest of old women—old, though her hair was raven and her back unbent. Her dark skin and her features were of a type rapidly dying out, betokening a race which they say is pre-Celtic in origin. Certainly she always impressed us as weirdly old-world, even in this atmosphere of the past. Where is she now, I wonder? Has she forgotten the happy girls who taught her all the English she knew, and who cherish her memory as the most beautiful thing in that land of sleepy delight?

Has anything changed since we left the place that dark night, after the *deoch-an-dorus* on the doorstep? I should fear to return; yet if time can stand still anywhere, surely—surely it must be there, among the basalt cliffs and the peat-bog, and in the company of those simple-hearted men and women.

THE RED RAT'S DAUGHTER.

CHAPTER XXX.



THEIR first business when they reached the deck was to glance in the direction whence they had last seen the cruiser. Then she had been a living and very present reality to them; now she was only a tiny speck upon the horizon, and in a quarter of an hour, or even less, would have vanished altogether. They made their way aft to the taffrail, and stood there leaning on the rail, looking at her. Both felt that it was a crisis in their lives that had to be tidied over, and knew that if ever they desired to be happy together they must fight the next ten minutes on

their merits. For this reason, perhaps, they began by being unusually silent. It was Katherine who spoke first.

'Dearest,' she commenced very slowly, 'I want you to listen to me and not to speak until I have finished. I have something to say to you, and I don't quite know how to say it. I don't want you to think that I am capricious, or that I think only of myself. In this I am thinking of you, and of your happiness only.'

'I can quite believe that,' Browne replied, trying to force down the lump that was rising in his throat. 'But I must hear you out before I can say more. What is it you have to say to me?'

'I want you'—here she paused as if she were fighting for breath—'I want you to give up any idea of marrying me, and to put me ashore at the first port at which you call. Will you do this?'

Nearly a minute elapsed before Browne replied. When he did his voice was curiously husky.

'Katherine,' he said, 'this is just like you. It is like your noble nature to try and make my path smoother, when your own is so difficult that you can scarcely climb it. But you don't, surely, suppose that I should do what you ask—that I should give you up and allow you to go out of my life altogether, just because you have been tricked as I have been?'

She glanced up at him with a face as white as the foam upon which they looked. What she would have replied I cannot say; but at that moment MacAndrew, accompanied by Jimmy Foote, appeared on deck. The latter approached them and asked Browne if he could spare him a few minutes. Not being averse to any proposal that would tend to mitigate the severity of the ordeal he was then passing through, Browne consented.

'What is it you want with me?' he asked, as savagely as if he were being deliberately wronged. 'For Heaven's sake, Jimmy, be easy with me! You can have no idea what the strain of the last few minutes has been.'

'I know everything, my son,' said Jimmy quietly. 'Do you think I haven't been watching you of late? That is exactly what I am here for. Poor old boy, you've been on the rack a shade too long lately; but I think I can put that right if you'll only let me. I've great news for you.'

'I don't know what sort of news you can have that will be acceptable to me,' said Browne lugubriously. 'I'm carrying about as much just now as I can possibly manage. What is it?'

'Do you think you're altogether fit to hear it?' he asked. 'And what about Miss Petrovitch? Can you leave her for a few moments?'

'I will speak to her,' Browne replied, and accordingly went back to Katherine. A moment later he rejoined Foote.

'Now then, what is it?' he asked almost fiercely. 'What fresh treachery am I to discover?'

'Come to the smoking-room,' Jimmy replied. 'I can't tell you here on deck, with all the world trying to overhear what I have to say.'

When they reached the cabin in question Browne discovered MacAndrew there, sitting on one of the marble tables and smoking a cigarette.

'I don't know what you think about it, Mr Browne,' said the latter; 'but it strikes me now that we have come very well out of that little encounter with our Muscovite friend over yonder. The idea they've got in their heads is that the runaway and myself are not on board; and if I know anything of their tactics, they will patrol

the coast for the next week or ten days in the expectation of your coming back to pick us up.'

'I wish them joy of their stay,' Browne replied. 'By the time they're tired of it we shall be safely out of reach. But what is it you have to say to me, Jimmy? You didn't bring me here to talk about the cruiser, I suppose?'

'I did not,' said Jimmy, with a great show of importance. 'I brought you to talk about something far more interesting. Look here, old man. I don't, of course, know what your feelings may be; but I've got a sort of a notion that—well, to put it in plain words—that you're none too pleased with your prospective father-in-law. He doesn't quite come up to your idea of the man whom you had been told suffered martyrdom for his country's good—eh?'

'I have never said that I disapproved of him,' Browne replied. 'I don't know why you should have got this notion into your head.'

'You're very loyal, I must say, old man,' continued Jimmy; 'but that cat won't fight—not for an instant. Any one could see that. No, no; I know as well as if you had told me that you're as miserable as a man can well be, and so is Miss Petrovitch. I don't wonder at it. I expect I should be as bad if I were likely to be blessed with such a papa. I should be inclined to wish him back again in the wilds of Saghalien.'

'Oh, for Heaven's sake, get on with what you've got to say!' cried Browne. 'Why do you keep me on the rack like this?'

Jimmy, however, was not to be hurried. He had never had such a hand to play before, and he was determined to make the most of it.

'It was MacAndrew there who made the discovery,' he said. 'I only came in at the end, like the Greek Chorus, to explain things. The fact of the matter is, Browne, when our friend here and the little red-haired gentleman were shut up together in the tunnel, the former elicited the information (how he managed it I am not prepared to say) that the name of the ex-convict is not Polowski or Petrovitch, but Kleinkopf; that he is not a Nihilist, as we have been led to believe, but a diamond-thief of the first water.'

He paused to hear what Browne would say, and, if the truth must be confessed, he was mortified to find that the other betrayed no sort of surprise.

'I know all that,' said his friend. 'Have you discovered nothing else?'

'A heap more,' replied Jimmy; 'but perhaps you know that too. Are you aware that the convict is the famous Red Rat, who once defied the united police of Europe? Well, he is! He is also—and mark you, this is the greatest point of all—he is no less a person than *Madame Bernstein's husband!*'

'Madame Bernstein's husband?' cried Browne, in stupefied surprise. 'What on earth do you mean by that? I warn you not to joke with me. I'm not in the humour for it.'

'I'm not joking,' Jimmy replied, with all gravity. 'I'm telling you this in deadly earnest. The Red Rat is Madame Bernstein's husband. He was sentenced to transportation for life in St Petersburg, was sent to Siberia, and later on was drafted to Saghalien.'

'Is this true, MacAndrew?' inquired Browne. 'You should know.'

'It is quite true,' said MacAndrew. 'For my part, I always thought he was the man you were trying to rescue. If you will look at it you will find that he tallies exactly with madame's description of the man we wanted?'

'Oh heavens! how we have been deceived!' groaned Browne. Then, as another thought struck him, he added, 'But if this is so, then Miss Petrovitch's father is still in captivity.'

'No,' said MacAndrew; 'he has escaped.'

'What do you mean? When did he escape?'

'He is dead. He died early last year.'

A silence that lasted upwards of five minutes fell upon the trio.

'The more I think of it the farther I am from understanding it,' Browne said at last. 'Why should I have been signalled out for the task of rescuing this man, in whom I don't take the least bit of interest?'

'Because you are rich,' said Jimmy. 'Why, my dear fellow, it's all as plain as daylight, now that we've got the key to the puzzle. Madame was aware that Miss Petrovitch would do anything to rescue her father, and so would the man she loved. Therefore, when you, with your money, your influence, and, above all, your yacht, came upon the scene, she took advantage of the opportunity Providence had sent her, and laid her plans accordingly. You know the result.'

'And while Miss Petrovitch has been wearing her heart out with anxiety to save her father, this heartless woman has been deceiving her—to whom she owes everything—and adapting our means to secure her own ends.'

'It looks like—does it not?' said Jimmy. 'Now, what do you intend doing? Remember, you have two traitors to deal with—Madame Bernstein and Mr Maas.'

'I don't know what to do,' replied poor Browne. 'It is sufficiently vexatious. I shall have to tell Miss Petrovitch, and it will break her heart. As for Maas, we must consider what is best to be done with him. I'll have no mercy on the brute.'

'Oh yes, you will,' said Jimmy. 'Whatever you are, you are not vindictive, Jack. Don't try to make me believe you are.'

Leaving the two men together, Browne went in search of his sweetheart. When he found her, he

summed up all the courage he possessed and told her everything from the beginning to the end. She was braver than he had expected, and heard him out without comment. Only when he had finished she rose from her seat, and asked him to excuse her, saying that she would go to her cabin for a little while.

A little before sunset that afternoon a small brig was sighted, five miles or so away to the south-west. A course was immediately shaped to intercept her. Her attention having been attracted, she hove to and waited for the boat that Mason warned her he was sending. When she put off the third officer was in charge, and MacAndrew was sitting beside him in the stern sheets. They returned in something under an hour, and immediately on his arrival on board MacAndrew made his way to the smoking-room, where he was closeted with Browne for upwards of an hour. After that he went below with Jimmy Foote.

The orb of day lay like a ball of fire upon the horizon when they reappeared. This time they escorted no less a person than Maas himself, who looked as if he were scarcely awake. Without inquiring for them or asking leave to bid his host and hostess farewell, he disappeared down the accommodation-ladder, and took his place in the boat alongside, and his traps were bundled in after him. Half-an-hour later the boat returned, but this time Maas was not in her. MacAndrew ascended to the deck, and once more made his way to the smoking-room. He found Browne and Jimmy there as before.

'They will land him at Tomari in the Kuriles in three months' time,' he reported, with what appeared to be considerable satisfaction.

'Tomari is the capital of Kunashiri Island,' said Jimmy, who had turned up a copy of the *China Sea Directory* during the short silence that followed. 'It has a permanent population of about one thousand five hundred souls, which is largely increased in summer-time by fishermen.'

'You are sure he will be quite safe,' said Browne. 'Scoundrel and traitor though he is, I shouldn't like to think that any harm would befall him.'

'You need not be afraid,' replied MacAndrew. 'He is quite able to look after himself. Besides, the skipper is an old friend of mine, and a most respectable person. He will take every care of him, you may be sure. You have paid him well enough to make it worth his while.'

After that, for the remainder of the voyage, the name of Maas was never mentioned by any of the party. Even to this day Browne scarcely likes to hear it spoken. Nor does he permit himself to dwell very often upon what happened a few days later, when, after a most uncomfortable interval, the yacht rounded Hakodate Headland and came to an anchor in the harbour.

'Leave everything to me,' said MacAndrew when

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he went into the smoking-room to bid Browne farewell. 'I know how painful an interview would be for you all, and I think you can very well dispense with it. I believe they are ready to go ashore.'

'In that case, let them go. I never wish to see their faces again.'

'I can quite understand it; and now I must bid you farewell myself. I am sorry our adventure has not turned out more successfully; but at any rate you have had a run for your money, and you have seen something of life in the Far East.'

'I have indeed,' said Browne. 'Now, tell me of the arrangements you have made concerning these two miserable people. What will happen to them eventually?'

'They can do as they think best,' replied MacAndrew. 'They can either stay here or go wherever they please. The Nippon Yusen Kwaisha Line call here thrice weekly; and from Yokohama you can reach any part of the known world.'

'But they are practically penniless,' said Browne. Then, taking an envelope from his pocket, he handed it to MacAndrew. 'If you can find an opportunity of delivering it, will you contrive to let them have this. There is something inside that will keep the wolf from the door, for a time at least.'

MacAndrew looked at him a little curiously. He was about to say something, but he checked himself, and, stowing the envelope away in his pocket, held out his hand.

'You were not inclined to trust me when first we met; but I hope you are satisfied now that I have done my best for you.'

'I am more than satisfied,' replied Browne. 'I am very grateful. I wish you would let me do something to help you in return.'

'You have helped me,' MacAndrew answered. 'You have helped me amazingly; more perhaps than you think. Now, good-bye, and may good-luck and every happiness go with you.'

'Good-bye,' said Browne; and then the tall, graceful figure passed along the deck in the direction of the main companion-ladder. A few moments later the sound of oars reached his ears; and when they could no longer be heard Browne went in search of Katherine and Jimmy Foote.

'Well, old man,' said the latter when the screw had begun to revolve once more, 'what now? What is the next thing?'

'The next thing,' Browne replied, seating himself beside Katherine as he spoke, and taking her hand, 'is Yokohama, and a wedding, at which you shall assist in the capacity of best man.'

That night the lovers stood on deck, leaning against the bulwarks watching the moon rise from behind a bank of cloud.

'Of what are you thinking, sweetheart?' Browne inquired, looking at the sweet face beside him. 'I wonder if I could guess.'

'I very much doubt it,' she answered, with a sad little smile. 'You had better try.'

'You were thinking of a tiny landlocked harbour, surrounded by snow-capped mountains, were you not?'

'Yes,' she replied. 'I certainly was. I was thinking of our first meeting in Merok. Oh Jack! Jack! how much has happened since then!'

'Yes,' he answered slowly. 'A great deal has happened; but at least there are two things for which we should be thankful.'

'And what are they?'

'The first is that we are together, and the second is that you are not THE RED RAT'S DAUGHTER!'

THE END.

HAREM HOSPITALITY.



TRAVELLERS, even the leisurely and the enterprising, find themselves limited to the tourist tracks in the lands they visit. They may pay their way and welcome among bazaars, shops, and show-places; but the true inwardness of home-life is sacred everywhere from foreign curiosity, however well filled its open purse. One is more hopelessly aware of this fact in Eastern than in Western countries. It is quite possible to visit in Italy and France, and enjoy watching the many ways various families find of doing the same things; and the worst bar between us and our entertainers, in addition to individual peculiarities, is the difference in our race, religion, and language. But in the East the differences are beyond counting; for the world presents an angle to harem eyes so unfamiliar to us that there are indeed few things we can appreciate in common.

Off one of Cairo's most crowded thoroughfares, surrounded by high walls, stands the harem of a certain Turkish nobleman, Pasha S—, who was uncommonly well known in Egypt; not so much because he was bad—for there is nothing startlingly uncommon in that—but because he openly defied the laws, thereby drawing on himself the wrath of the English authorities, and consequent exposure of his doings in the leading British papers. On one occasion Pasha S— and some other Eastern potentates were arrested on the charge of buying slaves up the Nile and bringing them to Cairo. The case, however, could not be proved against him, and he was released; he testified gratitude for this by inviting to his harem two women-members of a Scottish family resident in Cairo, of which the present writer is one.

On the day appointed for our reception the outer gates were swung back by a tall Nubian,

who led us down a stone walk flanked by high walls, through an archway into a square court. Here he was supported by the presence of at least a dozen other men of equal blackness and solemnity, who escorted us in state to the door of the harem itself, where we found the Pasha's wife *par excellence* waiting to receive us. She was an immensely stout woman, enveloped in a dressing-gown of figured cotton; and, although the conversation that we had together was highly condensed owing to a total ignorance of each other's language, her demonstrations of welcome were exceedingly gracious. She led us, with kindly signs and a flat-footed waddle, through a suite of large, empty rooms, whose floors were waxed to such a degree that any pursuit but that of skating would have been a difficulty. We reached the supper-chamber, however, without accident, and found divans to sit on, arranged conveniently near two or three small Arab tables, set out with coffee, native scones, bowls of buffalo-milk, and the butter that had been made from it, as strong in taste as it was dark in colour. These delicacies were handed to us by our two harem friends, the Pasha's daughter and Feerooza, his niece. The latter we knew well, having spent many a hot afternoon in the cool of her airy bedroom, watching her twist brown cigarettes with her browner fingers. It will be a disappointment to the lovers of the beautiful to hear that she was only redeemed from plainness by a magnificent pair of dark eyes. She was distinctly too fat for our ideas of grace; and although not browner in face than a Spaniard, yet her colour was mottled and muddy. When we had drunk as much buffalo-milk as politeness obliged, our hostess went to the opening in the room where the door ought to have been, and clapped her hands. In answer to this summons, a black servant appeared and led us through rooms, empty of all but the gathering shadows, to the door of our sleeping-quarters, which he politely opened for our entrance, and then, as he respectfully withdrew, turned the key securely on us for the night.

The room was large and lofty, and contained no furniture of any description whatever except a bed. This familiar object did not blushing hug the wall as one expects a bed to do, but stood defiantly in the very centre of the room. Its magnificence suggested the thought that generations and generations of Pashas must have been born on and have died in it. It was four-posted, with gold gauze mosquito curtains, and destitute of sheets and blankets, but provided with two curious thick coverlets rolled together and stretched across the foot, with the object doubtless of symmetrically balancing the one long pillow in a cotton bag, hard as the floor and humpy as a camel, which occupied the other end. This bed emitted and radiated around it scents of all the spices of Arabia, and the still, hot air was noticeably thick to the eye with the fumes of some penetrating

incense that the guardians of the bed had been burning round it to do us honour. In defiance of those unaccustomed luxuries, we slept until shortly after six next morning, when the door was unlocked to admit black servants bearing water-jugs and cups of thick native coffee, to refresh us within and without.

On leaving the room we were joined in the court by the ladies of the harem, who were all clustered round the well with their dusky, dark-eyed babies. The Pasha's daughters-in-law, with their children, all inhabited this building; and it was such an immense place that nobody seemed exactly to know how many people were under the same roof. As soon as the sun's rays reached the courtyard, a procession of two or three dozen women started for the bath-house. In this place at first sight there appeared to be neither baths nor water. It was simply a marble room with taps fixed in the walls, whence the water fell on the floor and was led off by small gutters through a grating. Ranged round the sides were projecting basins like marble mangers, where a child might be placed out of the wet or given a bath. In the centre of the room a fountain was playing for people to sit under. It was not long before the taps were on and the clothes off, for instantly congested masses of women surrounded each waterspout. Until now we had absolutely believed that the women's leisure hours comprised every moment of the year; but we were mistaken, for here they are all busy washing either themselves, each other, or their clothes.

From this entertainment of jubilant femininity we were summoned to a twelve-o'clock English breakfast, where we sat upon chairs, the first we had seen since our arrival. After this meal everybody retired to rest, and we followed Feerooza to the largest of the two rooms belonging exclusively to her. This apartment, instead of presenting the crowded appearance of an English girl's boudoir, had nothing in it but a heap of cushions and a table hardly large enough to hold the candle (bent double with the heat), and a packet of tobacco. The room was hot and dark; Feerooza was proceeding to make a cigarette, when something banged against the closed shutters, and a large locust burst through a hole in the woodwork and fell with a thud on the polished floor. She carefully pulled her clothes well out of the way of contact with the wounded insect, and began leisurely to fan her ankles with a dried palm-leaf. These afternoon siestas were very pleasant, as we lay on comfortable cushions, wearing little but talking much. The discussions ranged round our different religions and customs, and over books we had or had not liked. Our girl-friend was a very devout Mohammedan, reverent in her prayers, and was spreading out a carpet, with her face bowed towards Mecca, when a cry from the neighbouring minaret reminded her that 'there is no God but one

God, and prayer is better than sleep.' She spoke of the howling Dervishes with great scorn, as merely mad fanatics, looked upon by any educated Mohammedan as beneath contempt. She also told how much more religious the men of her country were than the women, almost all of them abstaining from food, water, or amusements between sunrise and sunset during the Ramadan month; while they rarely drink wine, and constantly attend readings and other religious ceremonials in the mosques. She was so firmly persuaded that we Christians were polytheists that nothing could shake this idea; it had arisen from something she had read in a French book regarding the mystery of the Trinity. Her curiosity concerning our religion was quite inextinguishable, although she displayed an almost equal interest in hearing how our English engineers sat up night after night with the Nile, watching by its bed with an attentive finger on its fluctuating pulse; or how English girls rode races to the Pyramids and picnicked with the Sphinx. Strangely enough there were many customs that we had seen and she had only heard of—such as an ordinary Mouldid; the cutting of the Khaleej, when the figure of a girl—in olden days no effigy—is thrown into the water, to propitiate the angry Nile; or the passing of the Holy Carpet on its way to cover the Caaba at Mecca.

It was impossible for us, even with Feerooza's help, to arrive at an understanding of the exact position of the servants in the harem. Of the fifty or sixty women who were there, certainly most were either slaves or guests, for they received no payment beyond their food and lodging for doing for the most part nothing at all; while, on the other hand, some of them received handsome salaries. If any of them were ill-treated and wished to leave the harem, they could seek the protection of the British Government in the Cairo Slaves' Home, where they might remain until provided with a husband or a situation.

The conversation on those hot afternoons more often wandered to Feerooza's early years than to her present life. Of course a description of her presents no type of an ordinary harem-lady; for they are mere children in mind and manners, while Feerooza was exceptionally clever. Her father was born in Constantinople, and educated in Paris, where he learnt not only French and English, but absorbed with an appreciative mind many European ideas. Some years later, when his daughter was born, he arranged that German and English governesses should have complete charge of her, and Feerooza was twelve years old before the calamity of his death put an end at once to her education and freedom. From that day, ten years ago, until now she has been under her uncle's care, not only shut up in his harem, but engaged to be married to one of his sons, an honour which she has successfully managed to put

off more than once. Here, in addition to the occasional donkey-ride, there is only one outing allowed to relieve the monotony in the lives of the harem ladies. This treat is a picnic to a small island on the Nile belonging to the Pasha. Feerooza and her cousin, or one of us, veiled, and protected within a shut carriage by two female servants, guarded without by two male ones, might drive to the river and cross the water to this palmy grove. Here the excitement and delight consisted in the fact that they might walk without anything on their faces, lie on the grass if they could find any, or sit up to the knees in the Nile, enjoying all manner of delicious fruits, while watching man, the only forbidden one, sailing silently past them. On these occasions, instead of the ordinary dressing-gown of coloured cotton, they wore their state-garments of black silk, with black scarfs worn round the head. The servants changed their blue working-gowns for others made of camel-hair. We never heard Feerooza express any bitterness about her position during those rare holidays, nor, indeed, at any other time. She was so indolent that to hurry, even in the pursuit of pleasure, would have been impossible, although she was ready enough to enjoy any little change such as our society brought her, if there was no exertion required on her part.

Even more important, if possible, inside than outside the harem, was the dinner-hour; and the arrival of it put an end to our afternoon talk, for a servant had appeared to summon us to the table of our host. The party assembled in an outside room beyond the courtyard, and consisted of my cousin, with her husband, myself, and Pasha S—, who deferentially invited us to seat ourselves on the cushions surrounding the low dinner-table. The first course, a large bowl of white soup, stood in the centre of it, and we all ate from this common tureen with the wooden ladles provided. Fourteen courses followed on this solid foundation; one of them was a small sheep boiled whole. We were given no knives or forks; but each one pulled with the fingers the bit he or she liked best, and laid it on the flat scone which supplied the place of a plate. Whenever our host saw a piece of meat that he thought was particularly appetising, he pulled it off the sheep, and thrust it into the mouth of the guest unfortunate enough to be next him. The immediate neighbourhood of this man, whose face was the colour and consistency of perspiring putty, extinguished all desire to eat. Yet, for duty's sake, we went bravely through the goat-steaks, the iced vegetables, the rich sweets and pastries, and the elaborately constructed jellies. Our host told us with pride that he gave his cook ninety pounds a year; but we have no particular reason to suppose that he was speaking the truth. Two of the Pasha's sons waited on us during dinner, which was tediously long; and their last office, after handing coffee, was to place before each of us, in turn, a golden

basin with water to wash in. This meal and the Pasha's after-dinner smoke lasted so long that it was late before we separated. We were thankful to retire to the golden bed and sleep off the exhaustion that must ever follow the strain of combined overcivility and overeating.

On the afternoon of the next day we were invited, by good fortune, to the common women's quarters, to join the feast and add our voice to the rejoicings that welcomed the birth of a dragoman's son. Proceeding to this scene of festivity, we found a large crowd of women in blue-striped gowns and brightly-coloured shoes, waiting about aimlessly, gossiping. The arrival, however, of some dancing-girls immediately sent the whole bevy upstairs in hot haste to secure good places in the room used on such birthday occasions. The floor was instantly covered with kneeling and squatting women, leaving, one would have thought, hardly space in the centre for any dancing at all. This performance, however, occupied more time than space, for the dancers rarely took even a step backwards or forwards, confining their movements entirely to the body, which they jerked about as if it had no connection with the legs at all. After any peculiarly disgusting convulsion the applause rose high, and was shown by the curious whirring, throaty noise that is here the outward expression of pleasure. The happy announcement that food was ready mercifully put an end to the dancing, or we might have been sitting there yet; and the whole company flocked into the feast-room, where meats of all kinds were arranged down a low table. Here the women fell tooth and nail on the food, pulling off a bit of flesh here or fat there, till considerably more eating might have been had off the fronts of their dresses than from the disarranged dishes. Much-needed basins to wash in, coffee, and cigarettes followed each other fast, and the general opinion conveyed to those who could understand it was that the *fantasia* had been eminently successful.

It was with considerable relief that we left the heated atmosphere of the eating-room, to examine the quaint wicker beds that the native women

use. Nobody seems to care about sleeping in one place, and the beds are to be found anywhere and everywhere, from the court to the roof of the house. From these domestic scenes we passed out into the garden, which was delicious in the luxuriance of its undergrowth and tropical variety of flowers. We rested on timeworn marble seats, warm, as if possessed of some inward heat. White butterflies, like flickering flocks of sunlight, palpitated past us; bees with heavy force flew from flower to flower. Before us was an old fountain; it represented a cherub, whose marble cheeks were worn away by the countless living lips that have pressed his to receive the water that flows from them no longer. We were possessed by a drowsy lotus-eater feeling. Like a pulse throbbing within us, and a visible force enveloping us, the never-ceasing hum of life saturated the breathless air. Waves of heat arose tauntingly from the ground around the parched water-sprite; they quivered above his head like living things, and drove us, drowsy with their fumes, to seek the shelter of the cool harem. As we passed along the garden path the roar of traffic reached us from the street, where trees, choking for breath, threw a dusty shade on the thirsty throng. We had left for a day the rush of advancement, and were standing within shut walls which have enclosed, without a change, generation after generation of women for hundreds of years. It transports us to any age, for time has stood still here, while women's lives have flowed through it. Outside the walls voices echo to them from thousands of unseen speakers, and all day long the tread from ceaseless feet, following each other fast, rises to their ears from invisible travellers. Everything is unreal to them, except the harem wall, casting its deathly shadow on their lives, shutting them out of a world that would furnish them at least with some variety, if it was only a variety in their pain. It needs, indeed, the halo of romance that surrounds all ancient customs to conceal the horrible deformity of an institution that places under lock and key the best thing in the world—the influence of good women.

THE TAPU OF BANDERAH:

A TALE OF THE SOUTH SEAS.

CHAPTER V.—THE TAPU OF BANDERAH.



R and Mrs Deighton were at lunch, talking about the genial manners and other qualifications of their guests, when suddenly they heard a rapid step on the veranda, and Blount, the trader, dashed into the room.

His face was white with excitement, and they saw that he carried his revolver in his hand.

'What, in Heaven's name, is wrong, Mr Blount? Why are you armed?'

'For God's sake, don't ask me now! Our lives are in danger—deadly, imminent danger. Follow me to my house.'

'But, my dear sir,' began Mr Deighton, 'I do not see—I fail'—

'Man, are you mad? Do you think I do not

know what I am saying? Your two friends are both murdered. Banderah is now at my house, too exhausted to tell me more than to come and save you.'

'Dear, dear me! Oh, this is dreadful! Let us, Alice, my dear, seek'—

'Not now,' and the trader seized the missionary by the arm as he was about to sink upon his knees. 'Stay here and pray if you like—and get your throat cut. In ten—in five minutes more every native in the place except Banderah will be here, ready to burn and murder. I tell you, man, that our only chance of safety is to reach my house first, and then the schooner. Come, Mrs Deighton. For Heaven's sake, come!'

Pushing past the missionary, he seized Mrs Deighton by the hand and descended the steps. They had scarcely gone two hundred yards when they heard a strange, awful cry peal through the woods, and Mr Deighton shuddered. Only once before had he heard such a cry, and that was when, during the early days of the mission, he had seen a native priest tear out the heart of a victim destined for a cannibal feast, and hold it up to the people.

Suddenly Mrs Deighton gasped and tottered as they hurried her along; she was already exhausted. Then Deighton stopped.

'Mr Blount—go on by yourself. We have not your strength to run at this speed. I will help my wife along in a minute or two. Some of the mission people will surely come to our aid.'

'Will they?' said Blount grimly. 'Look for yourself and see; there's not a soul in the whole village. They have gone to see'—and he made an expressive gesture.

Mr Deighton groaned. 'Oh! this is terrible.' Then suddenly, as he saw his wife's deathly features, his real nature came out. 'Mr Blount, you are a brave man. I beseech you, save my dear wife. I am too exhausted to run any farther. I am too weak from my last attack of fever. But we are only a quarter of a mile away from your house now. Take her on with you, but give me your pistol. I can, at least, cover your retreat for a time.'

Blount hesitated; then, giving his pistol to the missionary, he lifted the fainting woman in his arms, and said:

'Try and come on a little. As soon as I am in sight of the house your wife will be safe. You must, at least, keep me in sight.'

As the trader strode along, carrying the unconscious woman in his strong arms, the missionary looked at the weapon in his hand and shuddered again.

'May God forgive me if I have done wrong,' he muttered. 'Take the life of one of His creatures to save my own I never will. Yet to save hers I must do it.'

Then, with trembling feet but brave heart, he

walked unsteadily along after the trader and his burden. So far no sound had reached him since that one dreadful cry smote upon his ear, and a hope began to rise in his breast that no immediate danger threatened. A short distance away, embowered among the trees, was the house of Burrowes. The door was closed, and not a sign of life was discernible about the place.

Heavens! were they asleep? He had heard that Burrowes and the German had been carousing all the morning with the captain of the *Island Maid*. Likely enough they were all lying in a drunken slumber. 'Lord give me strength to warn them,' he said to himself; and then, with a last glance at Blount and his wife, he resolutely turned aside, and began to ascend the hill.

But before he gained the summit Blount reached the fence surrounding his house, and Banderah and Taya and her two young brothers, rifles in hand, met the trader.

'Quick! take her;' and he pushed Mrs Deighton into Taya's arms and looked back.

'He's going up to Burrowes's house! Come, Banderah'—and he started back again—'he'll be speared or shot before he gets there.'

Just as the missionary reached the door and began in feeble, exhausted tones to call out, Blount and the chief caught up to him, and seizing his hands, dragged him away again down the hill.

'Don't bother about them; they are all on board,' was all Blount said. And there was no time to talk, for now fierce cries were heard in the direction of the mission-house, and Blount and Banderah, looking back, saw black, naked figures leap over the low stone wall enclosing the missionary's dwelling, and disappear inside.

'Just in time,' muttered the trader, as, dragging the missionary between them, they gained the house and set him down beside his wife, who, with a cry of thankfulness, threw her arms about his neck, and then quietly fainted.

For nearly half-an-hour Blount, with Banderah and the missionary by his side, looked out through the windows, and saw the natives plundering and wrecking the mission-house and the dwellings of Schwartzkoff and Burrowes. A mile away, motionless upon the glassy waters of the harbour, lay the schooner, with her boat astern, and every now and then Blount would take a look at her through his glass.

'I can't see a soul on deck,' he said to Mr Deighton. 'I heard that Peter and Burrowes went off this morning with the captain, all pretty drunk. I wish I knew what is best to do. To go on board would perhaps mean that those ruffians would shoot us down before we were alongside. No; we'll stay here and take our chance. Banderah says he feels pretty sure

that he can protect us from his own people. They'd never dare to hurt him; and I think that will steady them a bit;' and he pointed to the fence, upon which, at intervals, were tied green coco-nut boughs. These had just been placed there by Banderah himself, and meant that the house was *tapu*—it and all in it were sacred.

'God grant it may,' said Mr Deighton; and looking at the mystic sign, the use of which he had so often tried to put down as a silly, heathenish practice, he felt a twinge of conscience.

At last the work of plunder was over, and Blount and those with him, grasping their rifles tightly in their hands, saw a swarm of black, excited savages, led by two 'devil-doctors,' or priests, advance towards the house. At the same moment Banderah, looking seaward, saw that the boat had left the schooner and was pulling ashore. He was just about to point her out to the trader, when, for some reason, he changed his mind, turned away, and joined his white friends at the other end of the room.

Following the lead of the devil-doctors, who, stripped to the waist, and with their heads covered with the hideous masks used in their incantations, looked like demons newly risen from the pit, the yelling swarm of natives at last reached the fence outside Blount's house; and Mr Deighton, with an inward groan, saw among them some of his pet converts, stark-naked, and armed with spears and clubs.

Leaping and dancing with mad gyrations, and uttering curious grunting sounds as their feet struck the ground, the devil-doctors at last came within a few feet of the gate in the trader's fence. Then, suddenly, as they caught sight of a branch of coco-nut twisted in and around the woodwork of the gate, they stopped their mad-dened whirl as if by magic; and upon those behind them fell the silence of fear.

'Thank God,' muttered Blount, 'we are safe. They will not break Banderah's *tapu*.'

Then, rifle in hand, and with quiet, unmoved face, Banderah opened the trader's door and came out before them.

'Who among ye desires the life of Banderah and those to whom he has given his *tapu*?' he said.

The smaller of the two priests dashed aside his mask, and revealed the face of the old man Toka, who had struck Baxter his death-blow.

'Who, indeed, oh chief? If it be to thy mind to make *tapu* this house and all in it, who is there dare break it? To the white man Challi and his sons and daughters we meant no harm—though sweet to our bellies will be the flesh of those whom we have slain, and who now roast for the feast. But more are yet to come; for I, Toka, lost my son when thou, Banderah, lost thy sister, and the gods

have told me that I shall eat my fill of those who stole him.'

The savage, bitter hatred that rang through the old man's voice, and the deep, approving murmur of those who stood about him, warned both Banderah and Blount that the lust for slaughter was not yet appeased; so it was with a feeling of intense surprise and relief that the trader and the missionary saw them suddenly withdraw and move rapidly away to the rear of the house among the thick jungle.

'That's very curious,' said Blount, turning to Banderah, and speaking in English; and then the chief took him by the arm and pointed towards the shore. The boat pulled by Schwartzkoff and Burrowes, with Captain Bilker sitting in the stern, had just touched the beach. Then it flashed across his mind in an instant why the natives had left so suddenly: they were lying in ambush for the three men.

'By heavens! bad as they are, I can't let them walk to their death,' said Blount, jumping outside, so as to hail and warn them. But before he could utter a sound Banderah sprang upon him and clapped his hand to his mouth.

'Challi,' he said, 'they must die. Try to save them and we all perish. For the sake of thy daughters and of thy sons, raise not thy voice nor thy hand. Must all our blood run because of these three dogs' lives?'

Even as he spoke the end came. Staggering up the beach in drunken hilarity, the three whites did not notice, as they headed for the path, a file of natives, armed with spears and clubs, walk quietly along between them and the water's edge. There they sat and waited. But not for long; for presently, from out the thick tangled jungle in front came a humming whir of deadly arrows, and in a few seconds the three white men were wallowing in their blood. Then came that blood-curdling shout of savage triumph, telling those who heard it all was over. Before its echoes died away the bleeding bodies were carried to where a thick, heavy smoke rising from the jungle told the shuddering missionary that the awful feast was preparing. When he looked again not a native was in sight.

Standing apart from the others in the room, Blount and Banderah spoke hurriedly together, and then the trader came to the missionary.

'Mr Deighton, if you wish to save your wife's and your own life, and escape from this slaughter-house, now is your time. I believe we shall never be safe again, and I would gladly go with you now if I could. But my daughter Nellie is at Lak-a-lak, and—well, that settles it. Banderah here will tell you that he dreads for you to stay, as the priests may plot your death at any moment. I implore you, sir, to think of your wife. See! there is the boat, drifting along the beach with the tide. By all that is dear to you, I entreat you to be advised and get on board

the schooner, and whatever port you do reach, send a vessel to take me away.'

Then, almost before the missionary and his wife could realise what was happening, Banderah had run to the beach, swum to the boat, seized the painter, gained the shore again, and pulled her along till opposite the trader's house, just as Blount and Taya, supporting Mrs Deighton between them, were leaving the house to meet him.

In twenty minutes more they were close to the *Island Maid*, and saw that her crew were weighing the anchor. On the after-deck stood the mate and steward, with rifles in their hands.

'What on earth is wrong?' said the mate as the boat bumped up alongside, and the missionary and his trembling wife were assisted on deck.

'Don't ask now, man. Get your anchor up as quick as you can, and put to sea. Your captain and the two passengers are all dead. Clear out at once if you don't want the ship to be taken.'

'I thought something was wrong when I saw the native dragging the boat along. Lend us a hand to get under way, will you?' and the mate sprang forward.

In another five minutes the *Island Maid's* anchor was up, and then Blount and Banderah, with a hurried farewell to Mr and Mrs Deighton, sprang into the boat and pushed off.

'May God bless and keep you,' called out the missionary to Blount, 'and may we meet again soon;' and then, sinking on his knees beside his wife, he raised his face to heaven, and the trader saw that tears were streaming down his worn and rugged cheeks.

But Blount never more saw nor heard of the missionary and his wife. Long, long afterwards he did hear that some wreckage of a vessel like the *Island Maid* had been found on Rennel Island, and that sovereigns were discovered among the pools and crevices of the reef for many years subsequently. Whether she ran ashore or drifted there dismasted—for a heavy gale set in a week after she left Mayou—is one of those mysteries of the sea that will never be solved.

Soon after the great feast Toka made a request for another victim to be furnished for the ovens. Banderah's practical nature showed itself in his reply. 'Yes,' said he, 'and thou shalt be the man;' and taking a spear, he passed it through the old priest's body.

Two years passed before another ship touched at Mayou, and Blount, now perfectly assured of his own safety, felt no desire to leave the island, for matters went along smoothly enough after this; and the trader prospered and grew rich under Banderah's protecting care.

THE 'ERMAK,' A NEW RUSSIAN ICE-BREAKER.



THE Russians, with their ports ice-bound and useless for some three or four months in the year, have always felt themselves cruelly handicapped in the commercial race for wealth, which seems to bid fair within the next half-century to take the place of the old-fashioned steel and gunpowder warfare among the nations of the future. Their attempts to secure open ports in the south were thwarted by the restraining clauses of various treaties, which hamper their movements, however little regard they may pretend to pay to them; and now that they have seized ice-free ports in China, and have an eye to a like chance on the Persian Gulf, they are more than ever concerned in all possible means of keeping open the existing home ports. In default of the Gulf Stream being obligingly induced to alter its course by the cutting of the Panama Canal (about which a good deal was said at one time), and so change the winter conditions of certain Russian ports on the Baltic, other less uncertain means towards the desired end have been taken. The ice-breaker, on any important scale, first presented itself to the Russians in the course of the construction of the great Siberian railway, when it became a

question of crossing the Lake Baikal, a distance of forty or fifty miles, by a ferry, or of building a line round its southern end, a distance of some hundred and fifty miles in length. The former route was first chosen, and a huge ferry to take three loaded trains at once was ordered, together with a combined tug and ice-breaker, to ensure a free passage all the year. The enormous cost of this scheme—a special floating-dock had to be built to facilitate the construction of the ferry and tug—and several other considerations, led to the practical abandonment of the ferry for the longer but more certain course of a railway round the southern end of the lake. The next attempt at ice-breaking on a considerable scale was made at Vladivostok, and with success. The port is now kept open the year round, and, together with the railway from it to Khabarovsk (the Ussuri Railway), on the Amur River, has completely revolutionised the conditions of life in the Russian Far East. Whereas in the old days the country was supplied with all the necessities of life—with the exception of meat and certain low grades of flour which came from the Chinese in Manchuria, only once a year from America and European Russia—it is now provided for by regular monthly sailings of the Russian Volunteer

Fleet steamers, as well as services, mostly under the German flag, from Chinese and Japanese ports.

The immense importance of an open port never, of course, required any demonstration; and once the practicability of the ice-breaker had been put to the test at Vladivostok, it was determined to attempt the same means at the more difficult port of St Petersburg. Admiral Makarof, a very distinguished oceanographer, whose pet scheme it was to construct an ice-breaker of such power that not only would it keep open the port during the winter, but also to some extent serve in the solution of Arctic problems, secured funds from the Russian Government, and the order for the new vessel was placed with the Armstrong-Whitworth Company on Christmas Eve, 1897. The *Ermak*, built of mild steel and on the admiral's plans, was launched on the Tyne on 17th October of last year, and in March 1899 arrived at Kronstadt, breaking its way with ease and certainty through the winter ice of the Neva.

The ice-breaker, it is not generally known, works not by direct impact, but by its enormous weight, artificially increased where required by filling numerous water-tight compartments distributed all over the ship. It will readily be understood, with a moment's reflection, that to ram or charge a field of ice and cut through it, as one so often hears these ice-breakers spoken of as doing, is an utter impossibility, even with ice no thicker than, say, a couple of feet. When that thickness is increased to double and treble, as is the case in the severe winters of Russia, the absurdity of the notion becomes still more evident. But the ice-breaker never attempts to cut through Arctic ice. It is constructed with a flat bottom; and when about to make an attack on a field of ice, water is pumped into the aft-compartments to bring the bow well above the surface. Then, retiring some distance from its mark, the ice-breaker charges full tilt at the ice, and lands, in consequence, partly on the top of it. The water in the aft-compartments is then pumped with all speed into those forward, so that, apart from the great weight of the steel ship, the enormous pressure of hundreds of tons of water is brought to bear upon the ice along a comparatively narrow line, starting from the edge of the field. If a crack as long as the ship itself does not ensue at the first attempt, it is pretty certain that at least the edge of the field will give, and by repeating the process a clear path is eventually made. The old pattern of ice-breaker in use at Vladivostok did no more than this, and after some hours' work generally found itself considerably hampered by frozen clouds of spray all over its bows, besides being under the necessity of passing to and fro unceasingly to keep the channel it had made open, since it did not dispose of the broken ice in its wake, and this, naturally, was not long in re-forming.

The *Ermak*, however, is a great improvement on

the old pattern, and is calculated to overcome all the old obstacles. In the first place, it is over three hundred feet long, and the value of length, when combined with strength, will be plain from the explanation given above of the *modus operandi*. It has four engines, each of two thousand five hundred horse-power, and four screws. Of the latter, three are placed in the usual manner at the stern, where also are three of the engines. The fourth engine and screw are placed forward. The vessel is seventy-one feet wide, and is divided into forty-eight water-tight compartments, capable of being filled and emptied with great rapidity by a large pump placed amidships, which is constructed to deliver two thousand three hundred gallons per minute.

The use of the novel introduction of a screw near the bows is to complete the opening up process by creating a strong rush of water, which will carry the blocks of ice broken up by the weight of the ship well astern, and allow of no re-forming while the ship is preparing for another charge at the field. There are many minor novelties. Among the least happy, perhaps, may be noted the introduction of the 'marine buffer,' an idea of Admiral Makarof's for avoiding the disastrous results of a collision at sea. He hopes to see it generally applied at some future time, either in the form now first invented for the *Ermak*, or some modification of it. The *Ermak's* buffer is a combination of tubes placed vertically, and supposed, in the event of a collision end-on, to yield sufficiently to avoid the penetration of the other ship's side, as would be the case with a sharp prow. It is probable that the Admiral's humane invention will not find very ready acceptance among shipbuilders or shipowners generally; but perhaps he may be able to give it a trial on the *Ermak*, and it would therefore be premature to anticipate the result. Among less utopian devices is one for utilising the heat of the waste water from the engines to warm the fore-part of the ship, which he hopes to do sufficiently to prevent the clogging of the bows, and consequent stoppage of way by freezing spray and the drift snow of the icefields. A hydrothermograph, placed beneath the ship, is intended to give warning of the changes of temperature, and can be made to ring an alarm at any desired degree, so as to indicate, for example, the approach of an iceberg or any other considerable quantity of ice.

The *Ermak*, named from the Cossack who in 1580 conquered part of Siberia for Russia, is capable of a speed of sixteen knots; but as that will only be required to charge and drive her well upon the icefields, her engines are so arranged that she can use all her three stern screws at a much less rate of speed, and with the least possible expenditure of fuel. Admiral Makarof exhibited a large model of the *Ermak*, and expounded the plan to the Royal Society of Edinburgh in 1899.

As arranged, the new ice-breaker was employed during this last winter in keeping the port of St Petersburg open. In summer the *Erma*k will pass through the Kara Sea to the mouth of the Obi and Yenisei. In autumn she will be on the way to England with a cargo of timber from the

mouth of the river Yenisei, and will return to St Petersburg, bringing a full load of good English coal for the Russian fleet, in time for the resumption of her peculiar duties during the winter. If the Kara trip succeeds she may ultimately bring her powers to bear on the ice that defends the pole.

THE MONTH: SCIENCE AND ARTS.

THE NEW PLANET.



N a certain August night last year Herr G. Witt, of the Observatory of Urania, in Berlin, took a photograph of a particular portion of the heavens, giving that picture a very long exposure, so that the minutest stars might find a record there. When the plate was developed it was found that in one part of it, amid the hundreds of dots which were star images, was traced a little streak, that streak indicating a body which was in movement. This body turned out to be an asteroid, one of those little planets which during the present century have been discovered to the number of four hundred and thirty-two, not counting this new one, which has been named Eros. The new asteroid turns out to be by far the most important of all its kindred, not because of its size, for it is only a very small body, but because at one part of its journey round the sun it will approach this earth nearer than will any other of the heavenly bodies—our moon alone excepted. The importance of such a near neighbour in space means that by its aid the actual distance of the sun and other bodies can be far more accurately measured than was possible before its discovery. It will also materially help in the more accurate determination of the movements of comets. Indeed, the discovery of our little neighbour Eros is one of the most important astronomical events of the century.

FOG-SIGNALS AT SEA.

Some interesting experiments have recently been made by the Rev. Mr Bacon, of Newbury, Berks, by means of a balloon, in order to detect, if possible, the presence of invisible banks of vapour in the upper atmosphere. Some years ago, when Professor Tyndall was making acoustical experiments at sea, off the South Foreland, the firing of detonating cartridges was followed by an echo not only from the land, but from space; and Tyndall ascribed this last echo to the presence of what he called acoustic clouds. From his balloon Mr Bacon has failed to obtain the same effect, although he uses a four-ounce cartridge of tonite, which gives a report like a cannon. The cartridge hangs by a line one hundred feet below the car of the balloon, and is exploded by electricity. Some

seconds after the explosion, the echo comes up from the earth like a tremendous roar; but no aerial echo has yet been detected. It is proposed to use these loud-speaking cartridges during foggy weather at dangerous rocky points at sea, and they have actually been tried with great success. They can be heard for twenty to thirty miles; and it seems certain that if such a means of warning had been available at the Casquets, and employed at the proper moment, the recent wreck of the *Stella* might have been obviated.

WASTE PRODUCTS.

From a very interesting report recently issued by Lord Kelvin and Professor Barr, it would seem that the term 'waste products' will in the near future cease to be employed; for the simple reason that there will be no waste. These two gentlemen have for some time been making investigations at Edinburgh, Bradford, and Oldham with regard to the destruction of town refuse, and the conclusions at which they have arrived are of great interest to local authorities, as well as to the general public. By means of modern methods of destruction, the most unpromising refuse—most of it of a noxious and putrescent nature—can be absolutely consumed without the creation of either nuisance or smoke. More than this, the products of combustion assume in many cases a distinct commercial value. In some cases, too, as our readers are already aware, the heat engendered in the destruction is utilised for the production of electricity for both light and motive-power. When this important result was first obtained it was found necessary to use coke and coal to assist the rubbish to burn; but now, by improved methods, no fuel is needed. This transformation of noxious filth into the finest and most beautiful form of artificial light is one of the triumphs of the century.

THE RAILWAY REST.

Railway carriages, of all classes, are now made so comfortable and luxurious that there is little to find fault with; and the happy possessor of a corner seat feels little fatigue although he may have travelled two hundred miles or more. If he has not been lucky enough to secure one of the corners, he will be in equally comfortable circumstances if he carry with him 'the railway rest' invented and patented by Mr Stewart of

Twynholm, Scotland. It consists of a band of serge material, with an attachment at one end by which it can be fixed to the bracket supporting the luggage-rack. The traveller slopes the band according to his taste, and, sitting upon the end of it, makes for himself an elastic back-rest against which he can lounge in great comfort.

SIXTY-FIVE MILES AN HOUR.

Our best express trains occasionally exceed the great speed of one mile a minute; but such a rate of travelling would have been until recently considered quite impossible for any sort of vehicle on a common highway. M. Jenatzy, a Belgian engineer, has recently built and driven a form of auto-car in France at the wondrous speed of nearly sixty-six miles per hour. The vehicle has apparently been built for speed and nothing else. It has the shape of a Whitehead torpedo in order to reduce air-resistance to a minimum, it is made of sheet-iron, and is mounted on a frame having four pneumatic-tired wheels. The motive-power is electricity; but after a short spurt at the tremendous speed mentioned the batteries require recharging. Photographs of the apparatus, stationary and in rapid motion, are reproduced in *The Auto-car* journal.

A REFLECTING FILM.

At the first conversazione of the Royal Society, held at Burlington House in May, many scientific novelties were shown; but none aroused more interest than the infinitely-thin silvered films exhibited by Mr A. Mallock. These films are obtained in a very novel manner, and consist practically of a material nearly akin to celluloid. A few drops of a solution of pyroxyline in amyl acetate are allowed to fall on the surface of water, when they spread out into a sheet a couple of inches in diameter, with a thickness of about the twenty-thousandth of an inch. The solvent evaporates, and the solid film can be lifted from the water on a ring of thin glass, and is afterwards gently washed in distilled water and silvered. Mirrors are constantly in request for various scientific instruments, and are very expensive when of glass; for the surface of the material has first to be optically worked—that is, made perfectly true—and the silver must be deposited on the surface so as to avoid the double reflection inseparable from ordinary looking-glass. It is said that the definition afforded by a reflected image from the film mirror is quite equal to that from carefully worked glass, while the cost is in comparison quite trivial.

POISONOUS PLANTS.

Distressing cases are not uncommon in which children, wandering in country places, have died through eating poisonous leaves, roots, or berries. The lower animals are commonly supposed to be

able to decide for themselves whether a plant is edible or not, and will refuse to touch anything harmful. But that this is not the case is well known to stock-keepers. The Royal Agricultural Society have recently been turning their attention to this important matter, and their consulting botanist has presented to them a report which abundantly illustrates the danger to grazing animals from poisonous plants growing on or near pasture-land. The pretty buttercup comes under the category of condemned plants, and is described as 'a worthless and dangerous weed.' It is more or less acrid in all its varieties, and cattle should not be allowed on pastures where it grows. Yews, laurels, and rhododendrons are very dangerous, the last two yielding a secretion which is rich in prussic acid. On the other hand, the cypress, which by common report is poisonous to cattle, does not seem to be harmful to them. It acts as an astringent; but no case is known in which any real injury has been caused to cattle from its presence.

NEW USES FOR GLASS.

The United States consul at Lyons has recently reported upon a new kind of pavement which has for some months been in use in Lyons, and has satisfactorily withstood the effects of heavy traffic. It is made of glass prepared in a peculiar manner, the product being known as ceramic stone. The factories where this material is prepared are of great extent, and we are told that in the yards were seen many tons of broken bottles, which the superintendent described as their 'raw material.' The treatment consists in heating the broken glass to the melting-point, and then compressing it by hydraulic pressure and forming it into moulds. For paving purposes the glass is made into bricks eight inches square, and is scored with cross lines, so that when the pavement is completed it resembles a huge chess-board. The glass loses its transparency and brittleness, and is said to be devitrified; it is as cheap as stone, and far more durable. It will resist crushing, frost, and heavy shocks; and can be employed for tubes, vats, tiles, chimneys, &c. It is available for all kinds of decorative purposes; and a large building made of the material will form an attractive object at the Paris Exhibition next year.

AGRICULTURAL REVIVAL IN ESSEX.

Six years ago the farmers in Essex were in a bad way. Thousands of acres were going out of cultivation, and landowners were glad to let their farms for a shilling per acre, if the tenant would pay tithe and taxes. Later on they offered their holdings free for a year or so to tenants who would undertake the trouble and expense of cultivation. A number of Scottish farmers came upon the scene, accepted the terms, and the experiment has succeeded. It is no longer profitable to grow wheat in Essex, and the new farmers at once

turned their attention to the dairy. They soon discovered that the industry would not pay them if the middleman were allowed, in the case of milk, to continue to absorb the lion's share of the profits. They therefore combined, formed a protection society, and determined to give the milk to the pigs rather than sell it below a certain price. Even under the revised conditions, the middleman secures about one hundred per cent. of the profits, and it thus comes about that a small milk-business employing only two carts will often produce an income of one thousand pounds per annum. There are few farmers nowadays who can hope for anything like such a return for their far more arduous and anxious labours.

TELEGRAPHY WITHOUT WIRES.

Owing chiefly to sensational newspaper reports with regard to the possibilities of wireless telegraphy, the public have been looking forward to the time when our streets shall no longer be excavated for the disposition of telegraph cables, and when our house-tops shall be free from a network of metallic spider-webs. Mr Preece's lecture before the Society of Arts will have dashed these pleasant hopes to the ground, for he has most emphatically shown that wireless telegraphy in its present form and limited speed cannot be named in the same category as the old system, and that it is only useful for special service under abnormal conditions. A curious instance of its efficacy is afforded by the collision in a fog of a steamer with the only lightship upon which Marconi's apparatus is as yet established. This lightship, which is twelve miles to the north-west of the South Foreland, was able to wire news of her predicament; and, had the need arisen, lifeboats would have been started from three or four ports to her assistance within a few minutes of the accident.

NEW LIFE-SAVING DEVICE.

There was recently a successful trial in St Katherine's Docks, London, of a method of rendering boats unsinkable—the invention of Mr E. S. Norris—a method which is as simple as it is effective. Supposing that he wishes to apply the invention to a lifeboat which is already fitted with water-tight compartments, he would fill those spaces with an indefinite number of closed tubes, each only a few inches long, made of some strong impervious material such as waterproof paper. But a boat with such compartments is not necessary, for the little cases can be held in a canvas band which can be nailed along the sides of any ordinary row-boat, and render it quite unsinkable. The principle can also be applied to life-belts and buoys—replacing the cork ordinarily used, with a great saving of expense. In the trials referred to, a specially-designed boat, with canvas-held tubes along her sides as well as fore and aft,

righted herself after being purposely capsized, although fitted with a mast and sail; while an ordinary boat similarly treated failed to sink, although the bung was removed to fill her with water, and seven men were aboard. These hopeful experiments were witnessed by representatives from the Admiralty and various shipping authorities.

FIRE EXTINCTION.

Lord Fortescue has in a recent letter to the *Times* advocated a system of water-supply which he has adopted in his own country house as a preventive against fire—a system originally suggested by Mr Osbert Chadwick, C.E. It is unfortunately only applicable when a constant supply of water under high-pressure is available. Upon every floor of the building to be protected there is provided a hose fitted with a nozzle; but this hose, instead of being the usual size, is only one inch in diameter. On the other hand, it is so light that a woman or child can easily control it, and a single valve will charge it with water at a moment's notice. The idea is to attack the flames before they get untamable, and before the arrival of a fire brigade. Every one knows that a gallon of water at this stage is more effectual than a hundred gallons later on. Another consideration is that the damage to decorations, furniture, and in factories to delicate machinery by the tremendous impact of a two or three inch stream of water—very often far more serious than that wrought by the flames—is almost altogether avoided by the use of the smaller hose. Protected in such a manner, and with a weekly 'fire-drill' for the inmates, any house or factory should be practically safe.

LENGTH OF LIFE.

According to M. I. Holl Schooling, of Brussels, there is a very easy way of calculating the age to which a human being may reasonably expect to live, but it is only applicable if his present age lies between twelve and eighty-six years. The method is really an old one, and was originally discovered by the mathematician Demoiere, who in 1865 emigrated from France to England, and became a member of the Royal Society. The rule is this: Subtract your present age from 86, divide the remainder by 2, and the result will give the number of years which you may expect to live. The rule may be approximately correct for some ages, and represents perhaps the nearest solution of an insoluble problem at which we can arrive.

ARTIFICIAL PEARLS.

The French scientific journal *La Nature* recently described some experiments by which the production of pearls was artificially induced in the shells of some molluscs kept in an aquarium.

No allusion is made to the circumstance that an extensive industry of this kind has been carried on for many years by the Chinese. The creature selected for the operation is a species of large fresh-water mussel, which is fished up from its *habitat* and returned to the water as soon as a little operation has been performed upon it. This consists in inserting between its body and the inner side of the shell a number of small round pellets of wax or clay, which in the course of a few months become coated with a layer of nacre, or mother-of-pearl. Sometimes small leaden images of some idol or divinity are made use of instead of the circular pellets, and these, when coated with the nacre, are sold as amulets or charms. All the gasteropods which secrete nacre will coat with it any foreign body which may by accident or design get within their shell, and hence it comes about that natural pearls have frequently a piece of driftwood or a particle of sand as a nucleus.

THE MANNA OF THE BIBLE.

The same journal has an interesting note by M. Henry Castrey on the manna picked up in the desert, which is supposed to be identical with that which plays such an important part in the history of the Jews as told in the Bible. It seems that in the present day Arabs who are obliged to traverse the sandy wastes of Arabia depend to a large extent upon this 'angel's food' both for themselves and for their camels. The manna is in reality a fungus which is found in great quantities on the sand after rain. Of a gray colour and of the size of a pea, it has a pleasant, sweet taste; and although its analysis shows that it is by no means a perfect food, it is sufficiently rich in nitrogenous matter and carbohydrates to sustain life for a long period.

FOG.

There is a prevailing notion that fog is something special to the Metropolis, and hence the term 'London particular' as applied to the 'peasoupers' of November and December. But fog is not a thing by itself—an essential entity, so to speak—but simply the outcome of something else—smoke, to wit. So that wherever there is a large consumption of coal by our present barbarous process of open grates there is sure to be fog. Manchester and Glasgow afford abundant evidence of that. Professor Oliver Lodge, who has discovered an electrical invention which will turn Scotch mist into rain and smoke into 'something white,' says the only way to prevent a London fog is not to cause it; and the way not to cause it is not to burn coal-fires, like savages, in open grates. He believes that the day will come when it will be forbidden to import crude coal into London, and he would like to see the experiment tried of making gas at the great coalfields, and

conveying it to the towns in huge pipes and conduits. The experiment, of course, could not be made with respect to London, as it would have to be conducted on too large a scale; but it might be tried with a small town, and it will have to come to that some day. People say they cannot bear 'gas-stoves;' but, as a matter of fact, all fires are gas-stoves, and people make the gas themselves, and make it very badly. No doubt, however, the gas-stove of the future will be a very different contrivance from that of to-day. Professor Lodge is right, and knows what he is talking about. Meanwhile there is to be a very determined effort made to deal with the 'black smoke' nuisance in London, under the provisions of the Public Health Act of 1893. An influential society has been formed, of which Sir W. B. Richmond, the eminent artist, is the head, to wage war against the polluters of the London atmosphere, be they manufacturers, hotel-keepers, or householders. As the *Spectator* points out, there is no evil better worth fighting than that of black smoke, for it is black smoke which puts a curse on city life, and helps to degrade the population of the poorer quarters of London. If the black smoke could only be got rid of, London, with its noble tidal river and its splendid parks and gardens, might be one of the most beautiful cities in the world, and also one of the most habitable. As it is, it is hopelessly dark, dirty, and depressing. Perhaps when Londoners realise that fog is only arrested smoke, they will take to grates which consume their own smoke, or, better still, to coals which emit none.

'WHEN DAWN TAKES WING.'

WHEN Dawn takes wing, she eastward drives and 'lights
From love-dreams deep to wake the languid Sun;
The crimson portal with her pinions smites,
And cries, 'A day begun!'

When Night takes wing, she flies toward the west,
Where flames with drowsy light the Day-god dear;
She piles cloud-curtains o'er his place of rest,
And whispers 'Night is here!'

When Hope takes wing, she toward true hearts aspires
With fancies to beguile the soul forlorn;
She weaves fond dreams of wistful, sweet desires,
Proclaiming 'Love is born!'

KATHLEEN HAYDN GREEN.

* * * TO CONTRIBUTORS.

- 1st. All communications should be addressed 'To the Editor, 339 High Street, Edinburgh.'
- 2d. For its return in case of ineligibility, postage-stamps should accompany every manuscript.
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